

A4 22. A method as in Claim 1 further comprising a demetalized web containing said antenna to a cold foil stamping process whereby said antenna is transferred to a second web through a marrying zone registration.

31. A method as in Claim 15 wherein antennas on each side of the substrate are of different shapes.

A5 103 32. A method as in Claim 15 wherein antennas on each side of the substrate are of different metal thicknesses or densities.

102 33. A method as in Claim 15 wherein antennas on each side of the substrate are of a single shape.

102 34. A method as in Claim 15 wherein antennas on each side of the substrate are of a single metal thickness or density.

REMARKS

The Applicants thank the Examiner for his careful analysis of the specification and claims. Claims 1-30 are pending in the instant application. A restriction requirement was issued in the case and the Applicants elected claims 1-8, 14-17 and 22-25 without traverse. The remaining claims, claims 9-13, 18-21 and 26-30 have been cancelled without prejudice. The Applicants reserve the right to file a divisional application on the remaining claims at any time during the pendency of the original application.

In light of the election of claims, the Examiner requested the amendment of the title. The Applicants have amended the title as set forth above to recite only

the method and not the antennas formed by the method. Thus, the title is now descriptive and the rejection is traversed.

The Examiner has rejected claims 1-8, 14-17 and 22-25 under 35 U.S.C. §112, ¶2 as being indefinite and for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. The Applicants have amended the claims as set forth above to more distinctly claim the invention.

Claim 1 has been extensively amended. "The" has been deleted from claim 1. Lines 3-6 have been amended to clarify that the portion of the metal that does not form the antenna is removed from the substrate.

Claim 2 has been amended to correct the antecedent basis of various elements. Additionally, the claim has been amended to state that a plurality of antennas may be formed on a single substrate on distinct portions of the substrate. Each of the plurality of antennas is formed by the method of claim 1.

Claim 8 has been amended into a proper Markush claim.

Claim 15 has been amended to delete the phrase "said demetalization forms."

Claims 16 and 17 have been deleted and new claims 31-34 have been added to recite antenna of the same or different shape and antenna of the same and different thickness and density. Such language was accepted in claims 4 and 5; therefore, the Applicants believe that it is definite.

Claim 22 has been amended to delete the term "said."

The Applicants submit that in light of the amendments, the rejection under 35 U.S.C. §112, ¶2 is traversed.

The Examiner has rejected claims 1-6 and 14-17 under 35 U.S.C. 102(b) as being anticipated by Horne (US Patent 5,861,226). Horne teaches a method of

fabricating a resonant micromesh filter comprising the steps of applying a metal layer on a dielectric substrate and removing the metal layer to form an antenna array. The Applicants submit that the method of Horne requires the use of an exposure mask to protect part of the metal from exposure to ions. The exposure mask is repositioned over discrete areas of the metal covered substrate to create a pattern. Claim 1 has been amended to recite the limitation that an etchant is applied directly to the metal layer. No masks or ion generators are required.

The limitation of direct application of etchant is supported by the specification in the middle of paragraph 0033. It states:

The demetalization station 20 is essentially a printing station as might normally deposit ink, but in this case deposits a caustic substance or etchant 34 from tank 36, capable of removing specific portions 16' from the web material. This chemical etchant 34, usually sodium hydroxide (NaOH) in solution, is deposited onto the web 14 around the antenna pattern or design as determined by the design/printing plates mounted on roll 30, thus removing the metal 16' from the substrate 14 in a pattern around each antenna 10, such that the antenna 10 itself remains metalized.

Therefore, the etchant is applied to portions of the metal to be removed. The etchant oxidizes the metal creating a powder in the areas applied. The oxidized metal is removed by washing. The Applicants submit that the method of the amended claim 1 is distinct from that of Horne. As the remaining claims in the rejection, 2-6 and 14-17 are dependent on claim 1, they are also no longer anticipated by Horne. Therefore, the rejection under 35 U.S.C. §102(b) is traversed.

Claims 7-8 are rejected under 35 U.S.C. §103(a) as being obvious over Horne in view of Grabau (US Patent 6,147,662). Grabau teaches radiofrequency identification elements having a substrate made by a paper web. The Examiner

states that it would have been obvious to replace the dielectric substrate of Horne with the paper substrate of Grabau. The Applicants submit that such a substitution of substrates would not result in the instant invention. For the reasons above, the method of the instant invention is clearly distinct from that of Horne. The teachings of Grabau would not cause one to modify the teachings of Horne to make the instant invention. The method of Grabau involves the application of a mixture of thermoplastic resins and waxes containing conductive polymer to the substrate rather than the etching method of the instant invention. Thus, claims 7-8 are not obvious over Horne in view of Grabau and the rejection under 35 U.S.C. 103(a) is traversed.

Claims 22-25 contain allowable subject matter.

FEES

The Applicants have enclosed a check in the amount of \$200 for a two month extension to response to Office Action. It is believe that there are no additional fees due with this amendment. However, if a fee is due, the Commissioner is hereby authorized to charge any fees to deposit account 02-4070 referencing case number 7544-PA03.

CONCLUSIONS


In light of the forgoing amendments and arguments, the Applicants submit that the application is now in proper form for allowance. If the Examiner believes

///

that the prosecution of the application may be facilitated by an interview, the Examiner is invited to telephone the agent for Applicant collect at the number listed below.

Respectfully submitted,

Dated: Sept. 20, 2002

By: 
Colleen J. McKiernan
Agent for Applicant
Registration No. 48,570

BROWN MARTIN HALLER & McCLAIN LLP
1660 Union Street
San Diego, California 92101-2926

Telephone: (619) 238-0999
Facsimile: (619) 238-0062

Docket No.: 7544-PA03

VERSION OF THE TITLE AND CLAIMS WITH CHANGES SHOWN

In the Title:

METHOD FOR THE FORMATION OF RF ANTENNAS BY DEMETALLIZING
[AND ANTENNA PRODUCTS FORMED THEREBY]

In the Claims:

1. (Amended) A method for [the] formation of a radio frequency antenna of a predetermined pattern on a surface [area] of a substrate [which comprises] comprising applying a metal layer to a surface area of said substrate, applying an etchant in an inverse pattern to said predetermined pattern to said metal layer and thereafter removing [that] a portion of said metal layer comprising [which comprises] all metal within said surface area on said substrate other than metal [of said metal layer disposed] in said predetermined pattern comprising said antenna.

2. (Amended) A method as in Claim 1 wherein said substrate comprises a plurality of [said] surface areas and removal of a [said] portion of said metal layer comprises removal within each of said surface areas, such that a plurality of [said] antennas is formed with each antenna of said plurality being disposed within an individual [a respective one of said] surface area[s].

8. (Amended) A method as in Claim 7 wherein said web material is selected from the group consisting of [comprises] film and [or] paper.

15. (Amended) A method as in Claim 14 wherein [said demetalization forms] antennas are formed by demetalization on both sides of said substrate.

22. (Amended) A method as in Claim 1 further comprising a [said] demetalized web containing said antenna to a cold foil stamping process whereby said antenna is transferred to a second web through a marrying zone registration.

31. (New) A method as in Claim 15 wherein antennas on each side of the substrate are of different shapes.

32. (New) A method as in Claim 15 wherein antennas on each side of the substrate are of different metal thicknesses or densities.

33. (New) A method as in Claim 15 wherein antennas on each side of the substrate are of a single shape.

34. (New) A method as in Claim 15 wherein antennas on each side of the substrate are of a single metal thickness or density.